10/19/88 C5800-3B

THE WEEKLY OF
BUSINESS AVIATION™

Vol. 47 No. 16 | INTELLIGENCE | Page 121

PIPER AIRCRAFT will formally announce an agreement this week under which the University of North Dakota will buy up to 250 Piper aircraft of various models over the next five years. The agreement, valued at nearly $30 million, calls for UND to take delivery of 50 aircraft during the first 12 months including Cadets, Arrows and Seminoles.

FATE of several bills of interest to the aviation community are still unresolved as Congress moves into what could be the last week of this legislative session. Among items still awaiting final Congressional action are an amendment to the Technical Corrections bill to prohibit the Treasury Department from changing depreciation periods for aircraft (BA, Sept. 12/82); a vote on S.473, the general aviation product liability bill, which is being blocked by Ohio Democrat Sen. Howard Metzenbaum (BA, Oct. 3/105); and, a bill aimed at reducing drug trafficking that would require permanent N-numbers and impose additional fees and requirements for registering aircraft (BA, Oct. 10/113).

DOT SECRETARY James Burnley said Thursday the agency is continuing to work on two controversial rulemaking proposals regarding drug testing for aviation personnel in safety related positions and new requirements for installation of computerized access points at the nation's busiest airports. Burnley said he expects both rulemaking proceedings to be issued before yearend.

NUMBER of member companies in NBAA recently passed through the 3,000 mark for the first time.

GA GROUPS OPPOSE AMERICAN'S PROPOSAL FOR LIMITS AT CHICAGO AIRPORTS

A proposal by American Airlines that FAA treat all three of Chicago's major airports—O'Hare, Midway and Meigs Field—as a single entity for air traffic control purposes was quickly criticized last week by general aviation groups as unnecessary and unreasonable.

American filed a 12-page petition with FAA Tuesday seeking emergency action after FAA reduced the number of hourly IFR arrivals at O'Hare from 96 to 80 during the late afternoon and evening (BA, Oct. 10/118). American wants FAA to add Midway to the list of airports subject to the high density rule, establish slot levels for IFR operations at all three airports and "limit IFR operations at Meigs Field."

In a letter to DOT Secretary James Burnley, the General Aviation Manufacturers Association said "American's allegations that increased GA traffic is increasing delays is absolutely incorrect," noting that a recently completed FAA study of Chicago airspace showed GA operations down 8.5 percent at Midway, off two-tenths of one percent at Meigs and down 22.3 percent at O'Hare from fiscal 1984 to 1987." GAMA also said that "since there is no published instrument approach procedure for Meigs, it would be impossible to impose an IFR slot allocation scheme there, even if it were appropriate."

National Business Aircraft Association said "imposing artificial restrictions through slot allocations will not solve the problem..." NBAA said the FAA System Safety and Efficiency Review cited by GAMA "concluded that the bulk of the problems encountered in Chicago were attributable to controller staffing and training and the complexities of the airspace around Chicago." AOPA said "restricting operations at either Midway or Meigs airports is both unwarranted and uneccessary. Neither airport operates at capacity and it makes little sense to restrict airport access because of air traffic control errors at O'Hare."

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1988 BUSINESS JET ACCIDENTS/INCIDENTS

DATE	MODEL	DESCRIPTION	REGN	STATE	OPER	FTL	DAM *
88-01-08	L-36A	Collided with terrain during approach	N79SF	LA	Comm	2	D
01-15	DA-20F	Overshot runway takeoff for unreported reasons	VR-BJB	Switz.	Comm	-	D
01-18	HS-125	Descent below glide path ILS approach in IMC	XA-KUT	TX	Comm	1	D
01-21	DA-10	Overshot landing following inflight emergency	N79PB	TX	Corp	-	S
02-01	DA-20	Struck deer landing, nose gear collapse	N287W	WV	Comm	-	S
02-04	L-55	Drifted off rwy. side. Braking action poor	N760G	NY	Corp	-	M
02-19	L-1329	Landed 6900 ft. down 7250 ft. rwy., overshoot	N90KR	MI	Corp	-	M
02-24	L-25C	Power loss both engs. app. training	PT-KKV	Brazil	Comm	2	S
02-28	L-25B	Bird strike at V2, abort, overshoot	N800DR	-	Corp	-	M
03-18	L-24C	Near miss with Air Carrier on departure	N500NH	NJ	Corp	-	N
04-30	HS-125	Struck deer takeoff. Abort	N27RC	FL	Bus	-	M
05-16	CE-550	Flap separation during cruise flight	N81SH	PA	Comm	-	M
05-18	L-35	Nose gear collapsed during landing roll	N508P	NC	Corp	-	M
05-24	L-35A	Crash during initial climb. Circumstances unk.	N500RW	NJ	Comm	4	D
05-25	L-36A	Unauthorized 5 hr. flight by mtnce. technician	-	CO	Comm	1	N
06-17	L-24	Aircraft landed long, overshot runway	N29LA	FL	Comm	-	M
06-27	1124	Experienced uncontained engine failure, climb	N600J	KY	Corp	-	M
07-26	L-36A	Crash short of runway landing in VMC	N442NE	NJ	Comm	1	D
07-28	CE-550	Swerve off runway landing	N53M	NY	Comm	-	M
07-30	L-23	Crash on approach in VMC, poss. fuel unbalance	N745F	CA	Comm	2	D
08-10	HS-125	Aircraft hit by air to air missile at FL 350	258112	Botswana	Gov't	-	S
09-11	L-1329	Aircraft failed to rotate TO, abort, overshoot	N118B	LA	Corp	-	M

Source: Robert E. Breiling Associates

Information presented is based on preliminary reports and may change as the investigation continues.

* N - None; M - Minor; S - Substantial; D - Destroyed

22 BUSINESS JET MISHAPS REPORTED IN FIRST NINE MONTHS -- Operators of business jets were involved in 22 accidents or incidents that claimed a total of 13 lives during the first nine months of 1988, according to information compiled by Robert E. Breiling Associates, Inc. A brief description of the past quarter's accidents/incidents, along with similar information on business turboprops and turbine-powered helicopters, is shown in charts on the back of Pages 122-127. Robert Breiling has specialized in the compilation and analysis of business aircraft accident statistics for approximately 20 years. Since forming his own company several years ago, Breiling has published a number of comprehensive reports on different aspects of business aviation operations. These publications, which are available for sale, include Business Jet Accident Analysis for Corporate Aviation, Annual Turbine Aircraft Accident Review, Business Turboprop Accident Analysis, and, Twin Turbine Helicopter Accident Analysis. For more information, contact Breiling Associates at: 6020 N. Federal Highway, Suite 4, Boca Raton, Fla., 33487; (407) 997-2580.

VALUE OF NEW AIRCRAFT SHIPMENTS UP 25 PERCENT -- Value of new general aviation aircraft delivered during the first nine months of 1988 was up 25 percent over the same period last year, the General Aviation Manufacturers Association reported last week. GAMA said general aviation aircraft billings for the first three quarters of 1988 totaled $1.158 billion as opposed to $923.9 million a year ago. Number of new aircraft delivered was up slightly to 803 compared to 796 in the first nine-months last year. Business jet deliveries were up by 15.1 percent to 99 and turboprop deliveries increased by 9.7 percent to 193 during the first nine months of the year.

Third quarter billings increased by 38.6 percent to $375.3 million. Total number of units delivered rose 5.4 percent to 252 aircraft. Export billings for the year increased 28.6 percent to $368.6 million even though number of aircraft delivered to foreign customers declined slightly, from 325 last year to 309 so far in 1988.

JETSTREAM SUPER 31 RECEIVES FAA CERTIFICATION -- Federal Aviation Administration has granted type approval to the BAe Jetstream Super 31, the first dedicated commuter aircraft certificated under the agency's Part 23 certification standards for commuters. Under the new standards, gross weights of up to 19,000 pounds and passenger capacities of up to 19 are allowed. The Super 31 is fitted with uprated Garrett TPE331-12 turboprops to improve hot and high airfield performance, has a simplified wing structure and increased operating weights.

GRUMMAN, AGUSTA TO OFFER S.211 AS AIR FORCE TRAINER -- Grumman Corp. and Italy's Gruppo Agusta will offer the Agusta/SIAI Marchetti S.211 jet trainer to the U.S. Air Force for its Primary Aircraft Training System (PATS) requirement. Grumman spokesman Brian R. Salisbury called the deal between Grumman Aircraft Systems President Peter B. Oram and Agusta Chairman Raffaelo Teti "an agreement to agree" which will be "solidified over a period of years." The companies were expected to sign a memorandum of intent to establish a joint program committee to study costs and ways to modify the aircraft to meet the PATS requirement.

The Air Force doesn't expect to begin buying new primary trainers to replace its Cessna T-37s until the mid-1990s, but companies are already beginning to line up to compete for the service's 500-plus aircraft requirement. "It's obviously going to be such a very large program," an industry source said, "and a lucrative program, everybody wants to get a toe in the door as early as possible." He noted, however, that the program is close to 10 years away, and "that's an eternity. The (Air Force) could change their requirements by then."

WSU BREAKS GROUND FOR INSTITUTE OF AVIATION RESEARCH -- Wichita State University broke ground last week for the Institute of Aviation Research, a $7.1 million, 74,000-square-foot facility aimed at the advancement of "fundamental science and technology in selected areas of importance to aviation."

Institute will conduct studies in advanced materials and structures, aerodynamics and propulsion, aircraft deicing, stall/spin resistance, advanced manufacturing technology, software reliability, and management and human factors issues in aviation. Facility will include a high bay area with a ceiling height of 60 feet for crashworthiness and other studies and a more conventional three-story area for laboratories, offices and conference rooms. New building, along with existing labs, will supply the space and equipment conducive to research through the institute's five centers: Aviation Safety, Basic and Applied Research, Productivity Enhancement, Aviation Education and Training, and Management and Human Resource Development.

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1988 BUSINESS TURBOPROP ACCIDENTS/INCIDENTS

DATE	MODEL	DESCRIPTION	REGN	STATE	OPER	FTL	DAM *
88-01-10	SA-226T	Aircraft rolled inverted on liftoff	N800AW	MI	Corp	3	D
01-16	BE-90C	Landing gear collapsed landing	N7257P	KS	Comm	-	M
01-18	PA-31T	Hit trees, house during instrument app.	N200RS	AL	Bus	-	D
01-20	MU-2B	Acft. pitched & rolled after takeoff	N349MA	NJ	Comm	-	N
02-11	CE-425	Crashed executing missed app. IMC	N6771Y	FL	Bus	1	D
02-12	MU-2B	Structural damage due turbulence	N339MA	PA	Comm	-	S
02-16	CE-441	Near miss during IFR approach in IMC	N91WB	CO	Bus	-	N
02-18	PA-31T	Decompression at FL270. Window failed	N2645Z	CO	Comm	-	M
03-07	PA-31T	Near miss during controlled climbout	N484SC	IL	Corp	-	N
03-15	G-159	Hyd.sys.malf.Steering/brake loss landing	N750BR	Swiss	Corp	-	M
03-28	CE-425	Gear door separation during cruise	N74JW	NC	Pers	-	S
03-29	SA-227AT	Hit by aircraft while ataiting clearence	N30042	FL	Comm	-	S
04-05	BE-90	Exp. uncontrolled hardover, descent	N181LL	MN	Comm	-	S
05-10	BE-200	Near miss during approach	N1065T	IL	Corp	-	N
05-17	690A	Impacted terrain during night app.in VMC	N660RB	AR	Comm	1	D
06-07	PA-31T	Pilot incapacitation during landing roll	N811CM	WV	Bus	1	N
06-08	690C	Fuel exhaustion during approach	N47TT	CA	Bus	-	S
06-16	685	Aircraft settled after TO. Struck terrain	N165SE	AR	Bus	-	S
07-08	MU-2K	Landed short, left gear failed/collapse	N50K	NH	Bus	-	M
09-12	BE-200	Crash shortly after dark night TO in VMC	N1283	WY	Bus	1	D

Source: Robert E. Breiling Associates

Information presented is based on preliminary reports and may change as the investigation continues.

* N - None; M - Minor; S - Substantial; D - Destroyed

1988 TWIN TURBINE HELICOPTER ACCIDENTS/INCIDENTS

DATE	MODEL	DESCRIPTION	REGN	STATE	OPER	FTL	DAM *
88-01-05	S-76A	Main rotor blades hit helipad takeoff	N -	OH	EMS	-	M
01-20	AS-355F	Hard ldg. during run on ldg.,training	N5800F	TX	Comm	-	S
03-24	S-76A	Passenger struck by main rotor	N1547N	LA	Comm	-	N
04-09	A-109A	Hard landing following control malfunction	N33SV	SD	EMS	-	S
05-12	AS-355F	Tail rotor assembly separation, cruise	N101NC	NC	EMS	-	M
05-21	B-222UT	Aircraft crashed ldg. Circumstances unkn.	H-18	BWI	Gov't	1	D
06-23	S-76	Collided with powerlines takeoff	N54C	WV	Corp	-	D
07-12	BK-117	Rotor damaged from S-76 downwarsh, parked	N135CP	NY	Corp	-	M
07-13	S-58BT	Double engine failure during ext. load op.	N94AH	CA	Comm	-	S
07-14	SA-330J	Crash during liftoff from oil rig platform	N4703	GM	Comm	1	D
08-07	S-76	Wheel went off taxiway, acft. rolled over	N69WW	NJ	Comm	-	S
08-07	B-222UT	Stabilizer separated during cruise	N3190K	LA	Comm	-	M
09-07	BK-105C	Landed hard during quick stop practice	N210BB	TX	EMS	-	S

Source: Robert E. Breiling Associates

Information presented is based on preliminary reports and may change as the investigation continues

* N - None; M - Minor; S - Substantial; D - Destroyed

1988 SINGLE TURBINE HELICOPTER ACCIDENTS/INCIDENTS

DATE	MODEL	DESCRIPTION	REGN	STATE	OPER	FTL	DAM *
88-01-14	B-206	Passenger struck by tail rotor	N3NJ	NJ	Police	-	M
01-18	SA-341G	Attempted VFR flight in deteriorating wx.	N61DR	AZ	Pers	-	S
01-20	SA-350	Crashed while repositioning on pad	N26TM	UT	EMS	-	D
01-24	H-500	Lded.short, practice autorotation	N8366F	CA	Comm	-	S
01-28	B-204B	Crash landing following power loss	N8154F	AL	Comm	-	D
02-11	B-206	Tail rotor hit object landing in whiteout	N -	Cda	Comm	-	S
02-16	B-206B	Wire strike during photo flight	N21197	OH	Comm	-	S
02-16	H-500	Tail rotor failure Crash landing	N5093Y	MD	Comm	-	D
02-18	B-206A	Power loss hover. Hard landing	N7981J	OR	Comm	-	S
02-23	AS-350	Struck trees landing in marginal wx. night	N-	Cda	Comm	-	S
02-24	H-500	Tail rotor, gear box separation in flight	N5093	PA	PubSer	-	D
03-10	B-206B	Crashed during engine run up	N13Q	IL	Police	-	S
03-17	B-206L	Uncontrolled descent into the ground	N5759H	IL	Comm	-	D
03-17	B-206B	Acft. slid off helo pad landing	N2995W	HI	Comm	-	S
03-24	B-206B	Acft. rolled over following hard ldg.	N352BT	MA	Pers	-	S
03-29	B-206L	Hard ldg. Practice auto rotation. Tr.	N114FH	PA	Pers	-	S
04-02	SA-316B	Collective control malf. emerg. ldg.	N72590	UT	EMS	-	S
05-01	B-206B	Power/RPM loss app. Hard ldg. in river	N7094J	NY	Comm	1	D
05-12	B-206	Practice autorotation,late abort,lded short	N39071	NY	Police	-	S
05-13	H-500	During ldg, acft. went into violent turn	N4983T	HI	Comm	-	S
05-17	H-500	Pilot lost ground ref. in blowing dust, TO	N5258C	OR	Bus	-	S
05-24	AS-350A	Mid air with acft while passing rwy. end	N4882	AK	Comm	1	D
05-29	B-206B	Control lost during initial climb. Ditched	N83203	HI	Comm	-	S
06-04	FH-1100	Drive shaft coupling failure cruise	N53EP	HI	Comm	-	S
06-17	B-206L	Catastrophic in flight break up cruise	N114FH	NJ	Comm	3	D
06-18	B-206	Inflight main rotor, tail separation	N114FH	PA	Comm	2	D
06-19	H-500	Power loss cruise,auto rotation, hrd. ldg.	N1109P	MS	Pers	-	S
06-26	B-206B3	Power loss climb, auto rotation, hrd. ldg.	N2754A	MT	Comm	-	S
06-27	B-206L	Power/RPM loss. Hard ldg. autorotation	N2611	LA	Comm	-	S
07-05	H-500	Practice auto rotation, hard landing	N32CT	WV	Comm	-	S
07-10	AS-315B	Power loss hover,auto rotation,rough terr.	N47274	WY	Comm	-	S
07-13	SA-315B	Ext. load hit tree, loss of control	N3128G	OR	Comm	-	D
07-13	B-206B	Power loss during takeoff	N543CC	MA	Comm	-	S
07-28	H-500	Hard landing, main rotor severed tail	N9033F	IL	Comm	-	S
08-06	B-206	Power loss cruise, collided with terr.ldg.	N300TW	OR	Comm	-	S

1988 SINGLE TURBINE HELICOPTER ACCIDENTS/INCIDENTS (continued)

DATE	MODEL	DESCRIPTION	REGN	STATE	OPER	FTL	DAM *
88-08-10	B-206B	Fuel exh. hard ldg., rotor hit tail boom	N49727	SD	Comm	-	S
08-18	B-206B	Engine failure test flight, hard landing	N16962	TX	Comm	-	S
08-19	H-500	Tail rotor separation during cruise	N3766Z	FL	Comm	-	S
08-19	B-206L	Near miss with air carrier on final app.	N295CK	IN	Comm	-	N
08-31	B-206L	Collided with powerlines during patrol	N74WH	CA	Comm	-	D
09-01	B-206	Attempted TO with tiedowns attached	N5747Z	GM	Comm	-	D
09-09	B-204B	Main rotor separation in flight	CFAHY	WA	Comm	2	D

Source: Robert E. Breiling Associates

Information presented is based on preliminary reports and may change as the investigation continues.

* N - None; M - Minor; S - Substamtial; D - Destroyed

[9 mos.] 1988 BUSINESS JET ACCIDENTS/INCIDENTS BY OPERATOR

Fatalities in ( ).

	Corporate Executive	Commercial AirTaxi	Private Business	Other
U.S. Accidents	1	6 (11)	1	
Non Fatal	1	2	1	
Fatal	-	4 (10)	-	
Incidents	7	4 (1)	1	
Non U.S. Accidents	1	3 (3)		1
Non Fatal	1	1		1
Fatal	-	2 (3)		

[9 Mos.] 1988 U.S.BUSINESS TURBOPROP ACCIDENTS/INCIDENTS BY OPERATOR

Fatalities in ( ).

	Corporate Executive	Commercial AirTaxi	Private Business	Other
Accidents	1 (3)	4 (1)	6 (3)	-
Non Fatal	1	3	4	-
Fatal	1 (3)	1(1)	2 (3)	-
Incidents	3	3	3 (1)	-

NOTE

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10/31/88

THE WEEKLY OF
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Vol. 47 No. 18 | INTELLIGENCE | Page 137

DOT SECRETARY James Burnley announced a program last week to substantially boost the pay of some air traffic controllers and other critical FAA personnel. Program is designed to help resolve FAA's long-running staffing problems at facilities in areas with a high cost of living.

MASSACHUSETTS officials deny that Norman Fredkin's opposition to the PACE Plan at Boston's Logan Airport was the reason for his dismissal recently as chairman of the Massachusetts Aeronautics Commission (see article on Page 138). The state's action in removing Fredkin from the post is in sharp contrast to the Massachusetts Airport Manager's Association, which gave its Aviation Man of the Year Award to Fredkin last week.

MEMPHIS, TENN. could become a major depository of aircraft parts as more suppliers begin stocking spares at Federal Express' facility there. Atlantic Aviation is the most recent aviation supplier to join the FedEx Partsbank, storing pre-packaged parts for BAe 125 and Westwind aircraft. Atlantic said it can respond to A.O.G. and other high-priority parts orders within six hours by having the parts shipped directly from Memphis.

AOPA has asked FAA to extend until July 1, 1989 the compliance date for a rule requiring an endorsement by a flight instructor in a student pilot's logbook before the student could operate in a Terminal Control Area (TCA). AOPA said the Jan. 12, 1989 deadline adopted by FAA "allows precious little time to notify the aviation community and establish letters of agreement as required."

MOST FBOs WILL HAVE 24 MONTHS TO MEET NEW EPA FINANCIAL RULES

Environmental Protection Agency has adopted new financial responsibility rules for owners and operators of underground storage tanks (USTs) that give most fixed-based operators two years to meet the new requirements. The new rule was published in the Oct. 26 Federal Register. It outlines a four-phase compliance schedule, based on the number of USTs each operator has. The effective date of the new requirements is Jan. 24, 1988. However, that date is somewhat misleading, because EPA has established compliance dates based on the date the new rules were promulgated, i.e., Oct. 26, 1988.

Those firms with 1-12 USTs or who own only one facility with fewer than 100 USTs—which should include the majority of FBOs—will have 24 months, or until Oct. 26, 1990, to meet the new financial responsibility rules. National Air Transportation Association said an FBO survey it conducted indicates that 80 percent of FBOs have no more than six tanks. Firms with 13-99 USTs at more than one facility will have 18 months to comply and firms with 100-999 USTs will have 12 months to meet the new standards. The largest petroleum marketing firms, those with 1,000 or more USTs, must comply with the new regulations within three months, by Jan. 24, 1989.

The schedule in the final rule provides considerably more time to comply than earlier proposals from EPA, the first of which suggested a 90-day compliance period. A modified proposal published earlier this year would have phased in compliance over 18 months and would have provided only 12 months for operators of 6-49 USTs (BA, April 4/105).

The new rule establishes $1 million per occurrence as the minimum amount of required financial assurance for owners of USTs engaged in petroleum production, refining or marketing and for owners

(Continued on the following page)

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BUSINESS/PERSONAL AIRCRAFT INDUSTRY – THIRD QUARTER UNIT SHIPMENTS

		3rd Quarter 88	Cal. Year
AEROSPATIALE GENERAL AVIATION			
• Single-Engine			
TB-9	Tampico	0	1
TB-10	Tobago	11	23
TB-20	Trinidad	12	27
TB-21	Trinidad TC	2	4
TOTAL		25	55
BEECH AIRCRAFT CORP.			
• Single-Engine			
BE-F33A	Bonanza	22	76
BE-F33C	Bonanza	0	1
BE-A36	Bonanza	14	48
BE-36TC	Bonanza	2	11
• Multi-Engine			
BE-58	Baron	3	9
BE-58P	Baron	0	1
BE-76	Duchess	0	0
BE-C99	Airliner	0	0
BE-C90-1	King Air	8	24
BE-F90-1	King Air	0	0
BE-200	Super King Air	4	15
BE-200C	Super King Air	2	2
BE-300	Super King Air	13	33
BE-200T	Super King Air	0	0
BE-1900C	Commuter	7	28
Beechjet 400		2	9
Diamond IA		1	1
TOTAL		78	258
BRITISH AEROSPACE			
• Multi-Engine			
BAe	Jetstream 31	8	35
BAe 146-100		0	0
BAe 146-200		4	12
HS-125 Model A		5	14
HS-125 Model B		3	6
TOTAL		20	67
PILATUS BRITTEN-NORMAN			
• Multi-Engine			
BN-2B	Islander	3	8
BN-2T	Islander	0	0
Mark III Trislander		0	0
TOTAL		3	8
CANADAIR			
• Multi-Engine			
CL-6013A	Challenger	3	13
TOTAL		3	13
CESSNA AIRCRAFT CO.			
• Single-Engine			
CE-208	Caravan I	28	65
CE-210	Centurion	0	0
CE-T210	Turbo Centurion	0	0
CE-P210	Pressurized Centurion	0	0
• Multi-Engine			
CE-303	Crusader	0	0
CE-402		0	0
CE-414	Chancellor	0	0
CE-425	Conquest I	0	0
CE-441	Conquest II	0	0
CE-550	Citation II	8	20
CE-S550	Citation S/II	4	14
CE-650	Citation III	4	10
REIMS AVIATION			
• Single-Engine			
CE-F152		0	0
CE-F152	Aerobat	0	0
CE-F172	Skyhawk	0	0
• Multi-Engine			
CE-406	Caravan II	3	7
TOTAL		47	116
AVION-MARCEL DASSAULT			
• Multi-Engine			
AD-My.10	Falcon	1	5
AD-My.20	Falcon	0	0
AD-My.200	Falcon	0	0
AD-My.50	Falcon	4	8
AD-My.900	Falcon	9	24
TOTAL		14	37
De HAVILLAND AIRCRAFT OF CANADA			
• Multi-Engine			
DHC-5	Buffalo	0	0
DHC-6	Twin Otter	0	0
DHC-7		0	0
DHC-8		11	17
TOTAL		11	17
EMBRAER			
• Single-Engine			
EMB-201	Ipanema	0	2
EMB-711	Corisco	2	6
EMB-712	Tupi	1	1
EMB-720	Minuano	1	2
• Multi-Engine			
EMB-110	Bandeirante	0	0
EMB-120	Brasilia	8	22
EMB-121	Xingu	0	0
EMB-810D	Seneca II	5	14
EMB-820		0	0
EMB-821	Carajah	0	5
TOTAL		17	52
FAIRCHILD AIRCRAFT			
• Multi-Engine			
Merlin III-C		0	0
Fairchild 300		0	0
Merlin IV-C		0	0
Metro III		4	12
Expediter		0	0
TOTAL		4	12
GULFSTREAM AEROSPACE			
• Multi-Engine			
G-1159A	Gulfstream III	0	0
G-IV	Gulfstream IV	10	31
TOTAL		10	31
ISRAEL AIRCRAFT INDUSTRIES			
• Multi-Engine			
1125	Astra	*	8
TOTAL		*	8
LAKE AIRCRAFT			
• Single-Engine			
LA-4-200EP		0	0
LA-250	Renegade	6	24
TOTAL		6	24
LEARJET CORP.			
• Multi-Engine			
LR-31		1	1
LR-35A		1	11
LR-36A		0	0
LR-55		0	1
TOTAL		2	13
MAULE AIR INC.			
• Single-Engine			
M-5-180C		0	0
M-5-200		0	0
M-5-235C	Lunar Rocket	0	2
M-6-235		2	4
MX-7-180	Super Rocket	4	17
M-7-235	Super Rocket	6	12
MX-7-235		3	13
TOTAL		15	48
MOONEY AIRCRAFT CORP.			
• Single-Engine			
M-20J	201 Lean Machine	10	28
M-20J	205	8	17
M-20K	231	0	0
M-20K	252	11	30
M-20L	PFM	5	34
TOTAL		34	109

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		3rd Quarter 88	Cal. Year
PIPER AIRCRAFT CORP.			
• Single-Engine			
PA-28-161	Warrior	14	49
PA-28-181	Archer II	13	37
PA-28-236	Dakota	1	2
PA-28RT-201T	Turbo Arrow IV	2	7
PA-32-301	Saratoga	3	9
PA-32R-301	Saratoga SP	3	8
PA-32R-301T	Turbo Saratoga SP	0	0
PA-46-310P	Malibu	8	31
• Multi-Engine			
PA-34-220T	Seneca III	12	41
PA-31-500	Cheyenne IA	0	0
PA-31-620	Cheyenne IIXL	0	0
PA-42-720	Cheyenne III	0	0
PA-42-720	Cheyenne IIIA	0	2
PA-42-1000	Cheyenne 400LS	3	4
TOTAL		56	190
SHORT BROTHERS			
• Multi-Engine			
SBJ-CS-7	Skyvan	*	0
SD-3-30		*	0
SD-3-60		*	7
TOTAL		*	7
	SINGLE-ENGINE	194	591
	MULTI-ENGINE	154	474
	GRAND TOTAL	348	1,065

UNIT SHIPMENTS COMPARATIVE TREND: 18 MANUFACTURERS

	3rd Quarter			Calendar Year to Date		
	1988	1987	1986	1988	1987	1986
Aerospatiale	25	17	24	55	64	71
Beech	78	85	78	258	215	186
British Aerospace	20	24	21	67	73	49
Britten-Norman	3	5	2	8	19	6
Canadair	3	4	6	13	13	10
Cessna	47	38	136	116	139	403
Dassault	14	12	3	37	23	13
DeHavilland	11	6	6	17	26	26
Embraer	17	33	24	52	89	71
Fairchild	4	3	8	12	24	24
Gulfstream	10	*	4	31	10	12
Israel	*	*	4	8	5	9
Lake	6	6	6	24	16	18
Learjet	2	6	5	13	10	12
Maule Aircraft	15	8	12	48	43	44
Mooney	34	33	13	109	106	79
Piper	59	*	*	190	169	136
Shorts	*	3	3	7	15	14
TOTAL	348	283	355	1,065	1,059	1,183

* Figures not available